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Uranium Control and Computing Department, 2739
April 1 through April 30, 1951

Classification Cancelled

Or Changed To

By Authority Of G. W. MITCHELL
By J. M. Mitchell Date 4/13/72

I. Sample and Production Summaries

A. Plant Operations

The results of plant operations are reflected in plant physical inventory reports, departmental inventory reports, and loss distribution reports separately submitted.

II. Factors Affecting Operation

A. Material Accounting Section

1. Initiation of New Material Cycles

Two new material cycles, 1400 and 2000, designating enhancement ranges for material originating from operation of the second stage of the U-236 separation program were initiated in the month of April. When the U-236 separation program had accumulated 23 grams of uranium enriched to approximately 32% U-236 in material cycle 2800, the first stage was discontinued and an intensive clean-up was made of all equipment and appurtenances. The uranium enriched in U-236 was then transferred from Departmental Code 68, Special Pocket Take-out, to Departmental Code 66, Charge Preparation and Recycling, preparatory to operation of the second stage of the program.

In the second stage of the program the uranium enriched in U-236 from the first stage, will be used as charge material. The uranium collected in the R-pocket will have a U-235 concentration approximating 98% which will be crossed over into the 2000 cycle in Departmental Code 67. This material will then be stored in Departmental Code 77 in Building 9212 in the 2000 material cycle and will be available for transfer to other AEC installations for research programs. The uranium collected in the special pocket will have a U-235 concentration of approximately 3% and be enriched in U-236 to approximately 97%. This material from the special pocket, enriched in U-236, will remain in Departmental Code 68's 1400 material cycle in the custody of the Electromagnetic Research Group.

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The slugs will first be immersed in a degreasing solution, soaked in a pickle bath, rinsed in treated water and dried. They will then be inspected. The slugs that are not acceptable but that might possibly be satisfactory if the process is repeated, are run through the cleaning and pickling process again. Slugs that are finally unsatisfactory will be returned to Departmental Code 46 on 94-46 waybills to be used as charge material for casting make-up batches.

The slugs that meet specifications will be processed as follows:

During the time the slugs are being cleaned the cans are also going thru a cleaning and preparation process. Each can is placed in a steel sleeve and this assembly is then immersed in a bronze bath for sixty seconds, immersed in a tin bath for forty seconds, whirled in a centrifuge for eight seconds, and immersed in an aluminum silicon solution for six seconds. While the can is in the al-si bath, the slug is inserted and the cap is placed on the can. The canned slug is removed from the sleeve by quenching in water, the top of the can is machined off on a lathe, and a bead is welded around the joint of the can and the cap. The can is then tested in an autoclave under pressure of 250 pounds per square inch. The cans which pass this test are etched as a test for silicon, and then given a final inspection.

Canned slugs that do not meet final specifications will be processed in salvage operations within the code to recover the uranium. Canned slugs that meet final specifications will be accumulated until shipment to other AEC installations.

The uranium content of the canned slugs will be computed by deducting the uranium removed from the process from the uranium introduced into the process each month and dividing this amount by the number of slugs canned during the month.

B. Machine Room Section

1. Recycle Material Accounting

Type 407 accounting machine control panels for recycle inventory reports were wired and will be used in preparing the May 1st inventory reports.

2. Weather Data

Work on weather data during April was concentrated on a special project, a test of stability criteria, for the Weather Bureau. Basically, three types of stability criteria, namely, the vertical temperature gradient, the Richardson number (involving both vertical

temperature gradient and wind shear), and the time of day will be compared with respect to their effectiveness in isolating the degree of turbulence. Data for the 6 months from November, 1949, through April, 1950, consisting of some 30,000 to 40,000 observations, will be used. A total of 39 tables, using different combinations of stability criteria and weather conditions, have been requested.

By the end of April a procedure had been worked out and processing of cards for the first table was about 50% completed.

3. Personnel Records and Wage Standards

The regular monthly list of plant personnel, listed by department and badge number, was issued.

Wage standards quarterly reports, including wage indices by division for non-exempt and exempt payrolls, were issued.

A special listing of all Maintenance Division personnel was made for Mr. Tibbatts.

4. AEC Manpower Survey

A list, in alphabetical order, of all employees on the Y-12 payroll as of April 1st, was prepared for Mr. Flack. After the cards for this list were put in alphabetical order, they were punched, on the 604 calculator, with consecutive numbers beginning with 10,000. These numbers were then used as the basis for assigning new AEC identification numbers for Y-12 employees.

By the end of the month, key punching of new survey cards for both Y-12 and X-10 was approximately 95% completed.

5. Medical Reports

a. Y-12

The regular monthly report for the Y-12 Medical Department was issued.

A reproduced deck of dispensary visit cards was prepared for special statistical studies to be made under the direction of Dr. A. G. Kammer at the Graduate School of Public Health, University of Pittsburgh. (See Progress Report for Month of March, 1951.)